

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1-10. (Cancelled)

11. (Currently Amended) A biodegradable biocompatible polyurethane/urea polymer composition comprising the reaction product of:

- a) a flowable prepolymer comprising the reaction product of:
 - i) an isocyanate; and
 - ii) a low molecular weight multifunctional core molecule having a molecular weight of 400 or less and at least two functional groups that react with said isocyanate thereby forming urethane or urea groups; and
- b) a soft segment-forming functional oligomer chosen from:
 - i) linear oligomers;
 - ii) star oligomers;
 - iii) dendrimeric oligomers; ~~or and~~
 - iv) hyperbranched oligomers;

wherein the functional oligomer has degradable arms;

and wherein the polymer composition is curable at a temperature of 30°C.

12. (Previously Presented) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein said linear, star, dendrimeric, or hyperbranched soft segment forming functional oligomer having degradable arms is selected from the group consisting of lactides, glycolides, lactide/glycolides, caprolactones, propylene fumarates, glycolic acid, dioxanones, anhydrides, polyorthoesters and phosphorylacholines.

13. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein said linear star dendrimer or hyperbranched soft segment forming functional oligomer with degradable arms is zwitterionic.

14. (Previously Presented) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, comprising the reaction product of water, polycaprolactone triol and a prepolymer wherein said prepolymer comprises the reaction product of pentaerythritol and methyl 2,6-diisocyanato hexanoate.

15. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, comprising the reaction product of water, polycaprolactone triol and prepolymer comprising the reaction product of glucose and methyl 2,6-diisocyanato hexanoate.

16. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, comprising the reaction product of water and polycaprolactone triol and a prepolymer comprising the reaction product of glucose and ethyl 2,6-diisocyanato hexanoate.

17. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, comprising the reaction product of polycaprolactone triol and dihydroxypolycaprolactone phosphoryl choline and a prepolymer comprising the reaction product of pentaerythritol and methyl 2,6-diisocyanato hexanoate.

18. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, comprising the reaction product of polycaprolactone triol and a 1,2-dihydroxy-N,N-dimethylaminopropane sulfonate zwitterion and a prepolymer comprising the reaction product of glucose and methyl 2,6-diisocyanato hexanoate.

19. (Previously Presented) A biodegradable, biocompatible polymeric scaffold comprising a cured biocompatible, biodegradable polyurethane/urea composition as claimed in claim 14.

20. (Original) A biodegradable, biocompatible polymeric scaffold as claimed in claim 19 having a compressive strength in the range of 0.05–80 MPa.

21. (Previously Presented) A biodegradable, biocompatible polymeric scaffold as claimed in claim 19, having pores in a size range of 150–300 micron.

22. (Currently Amended) A biodegradable, biocompatible polymeric scaffold as claimed in claim 14, further comprising biological components selected from the group consisting of cells, progenitor cells, growth factors, components for supporting cell growth, calcium phosphate, hydroxyapatite, adhesives, fibrin, collagen, transglutaminase systems, surfactants, siloxane surfactants, porogens, silica particles, powdered silica, sugars, sodium chloride type salts, polymeric hollow fibers, and gelatin beads.

23. (Withdrawn) A process for the preparation of a biocompatible, biodegradable polyurethane/urea composition as claimed in claim 11, comprising
reacting an isocyanate with a core molecule having at least two and preferably three or more functional groups that react with said isocyanate to form urethane or urea groups under suitable conditions to form a prepolymer composition with a flowable viscosity; and
reacting said prepolymer with a star soft segment forming functional oligomer with degradable arms and optionally, appropriate amounts of water and catalyst under conditions such that the reaction temperature does not exceed 90°C.

24. (Withdrawn) A process as claimed in claim 23 wherein the functional oligomer is soluble in said prepolymer.

25. (Withdrawn) A process as claimed in claim 23, further comprising the step of reacting said prepolymer with high molecular weight degradable polymer selected from the group consisting of PLGA, PLLA and poly(anhydrides).

26. (Cancelled)

27. (Withdrawn) A method of treatment of damaged bone or cartilage in a patient requiring such treatment, the method comprising administering to said patient a biocompatible, biodegradable polyurethane/urea composition as claimed in claim 11, said administration

occurring by the implant of a scaffold formed *ex-vivo* from a cured form of said polyurethane/urea composition, or by the injection of said polymer in an uncured form for *in-vivo* curing and scaffold formation.

28. (Withdrawn) A process of repairing bone and/or cartilage comprising integrating said scaffold formed from said biocompatible, biodegradable polyurethane/urea composition as claimed in claim 11 with bone and/or cartilage.

29. (Withdrawn) The process for the preparation of a biocompatible, biodegradable polyurethane/urea composition as claimed in claim 23, wherein the reaction temperature does not exceed 60°C.

30. (Withdrawn) The process for the preparation of a biocompatible, biodegradable polyurethane/urea composition as claimed in claim 29, wherein the reaction temperature does not exceed 40°C.

31. (Withdrawn) The biodegradable, biocompatible polyurethane/urea scaffold as claimed in claim 26, wherein the reaction temperature dose not exceed 60°C.

32. (Withdrawn) The biodegradable, biocompatible polyurethane/urea scaffold as claimed in claim 31, wherein the reaction temperature does not exceed 40°C.

33. (Withdrawn) A biodegradable, biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein the isocyanate used in formation of said prepolymer is 1,6-hexanediisocyanate.

34. (Withdrawn) A biodegradable, biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein the isocyanate used in formation of said prepolymer is isophorone diisocyanate.

35. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein the prepolymer composition is the reaction product of pentaerythritol and ethyl-2,6-diisocyanate hexanoate.

36. (Withdrawn) A biodegradable, biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein the prepolymer composition is the reaction product of trimethylol propane and ethyl-2,6-diisocyanate hexanoate.

37. (Withdrawn) A biodegradable, biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein the linear star dendrimer or hyperbranched soft segment forming functional oligomer with degradable arms is polycaprolactone triol.

38. (Withdrawn) A biodegradable biocompatible polyurethane/urea polymer composition as claimed in claim 11, wherein the linear star dendrimer or hyperbranched soft segment forming functional oligomer with degradable arms is formed from polyethylene and L-lactic acid, polyethylene and d,l-lactic acid, or polyethylene and glycolic acid.